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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193158 MLRS, MISSILE NUMBER V13-004, ROUND NUMBER V-169/AT-2, 1--ETC(U)
JUL 81 D C KELLER
ERADCOM/ASL-DR-1195

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JULY 1981

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METEOROLOGICAL DATA REPORT

19315B MLRS

Missile Number V13-004

Round Number V-169/AT-2

17 July 1981

by

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10 DONALD C. KELLER

Program Support Coordinator

Phone Number (505) 679-9568

AVN Number 349-9568

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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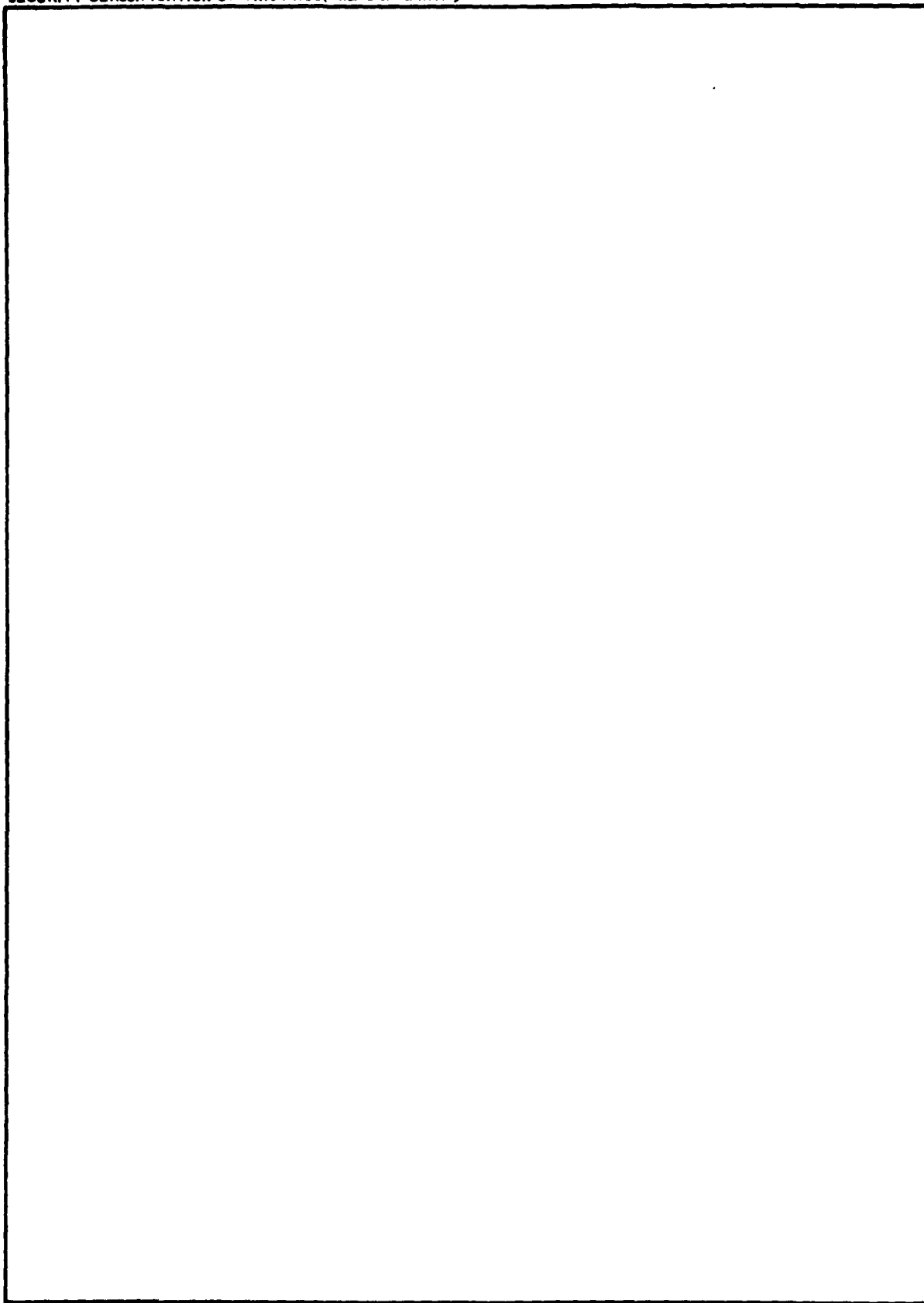
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19315B MLRS, Missile Number V13-004, Round Number V-169/AT-2 presented in tabular form.		

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)



SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

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INTRODUCTION

19315B MLRS _____, Missile Number V13-004 _____, Round Number V-169/AT-2 _____,
was launched from LC-33 _____, White Sands Missile Range (WSMR), New Mexico,
at 1432 MDT _____ on 17 July 1981 _____. The scheduled launch time was
1430 MDT _____.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), Wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from **Pilot-Balloon** observations at:

SITE AND ALTITUDE

LC-33	800 Meters
NICK	2000 Meters

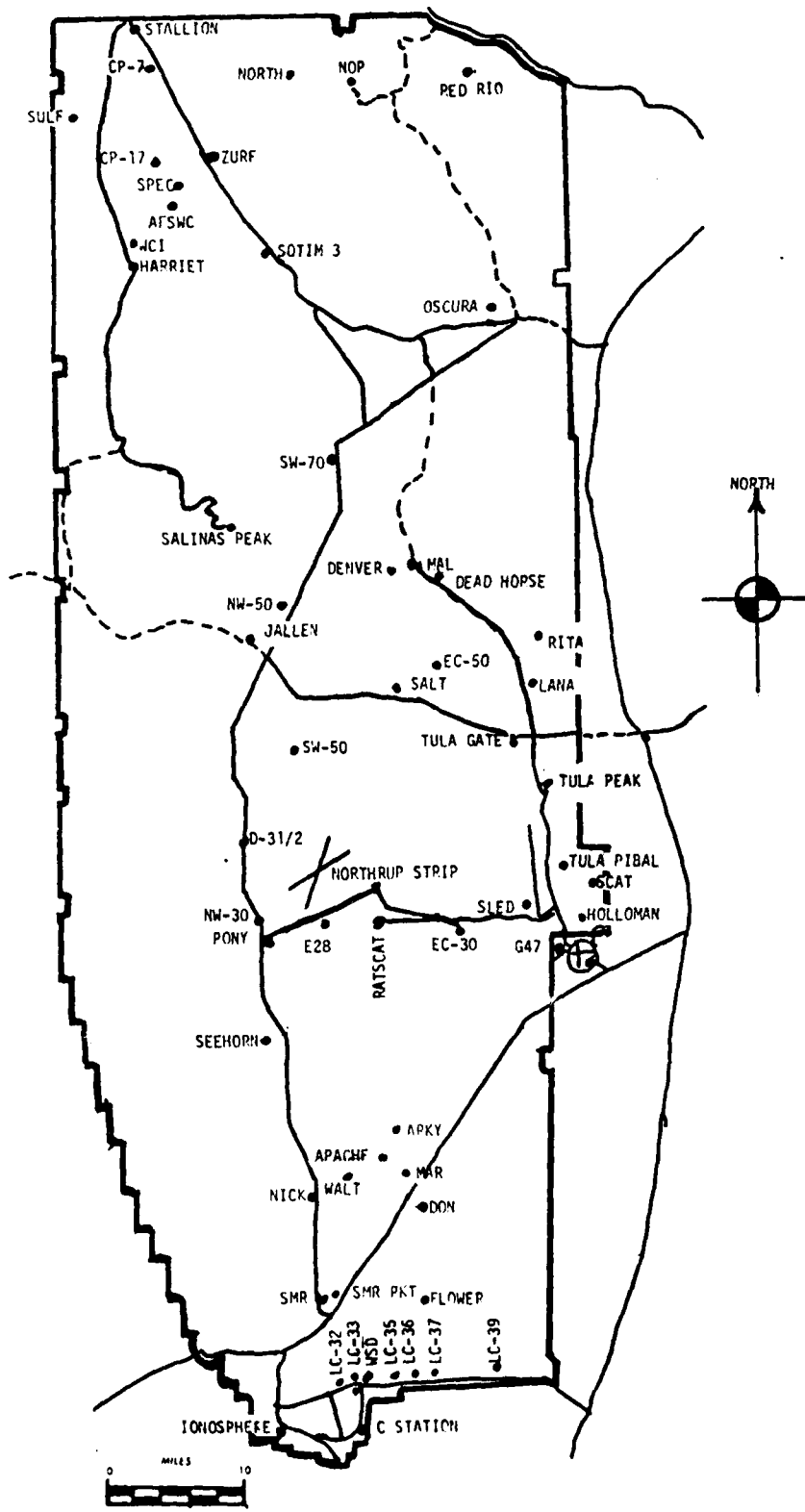
(1) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME

WSD 1130 MDT
LC-37 1230 MDT
LC-37 1430 MDT

Accession For	
PUS GR&I	
REF T 4	<input checked="" type="checkbox"/>
UNCLASSIFIED	<input type="checkbox"/>
DECLASSIFIED	<input type="checkbox"/>
BT -	
Distribution	
Availability Codes	
1 - 100/07	
1 - 100/07	
A	

WSMR METEOROLOGICAL SITES



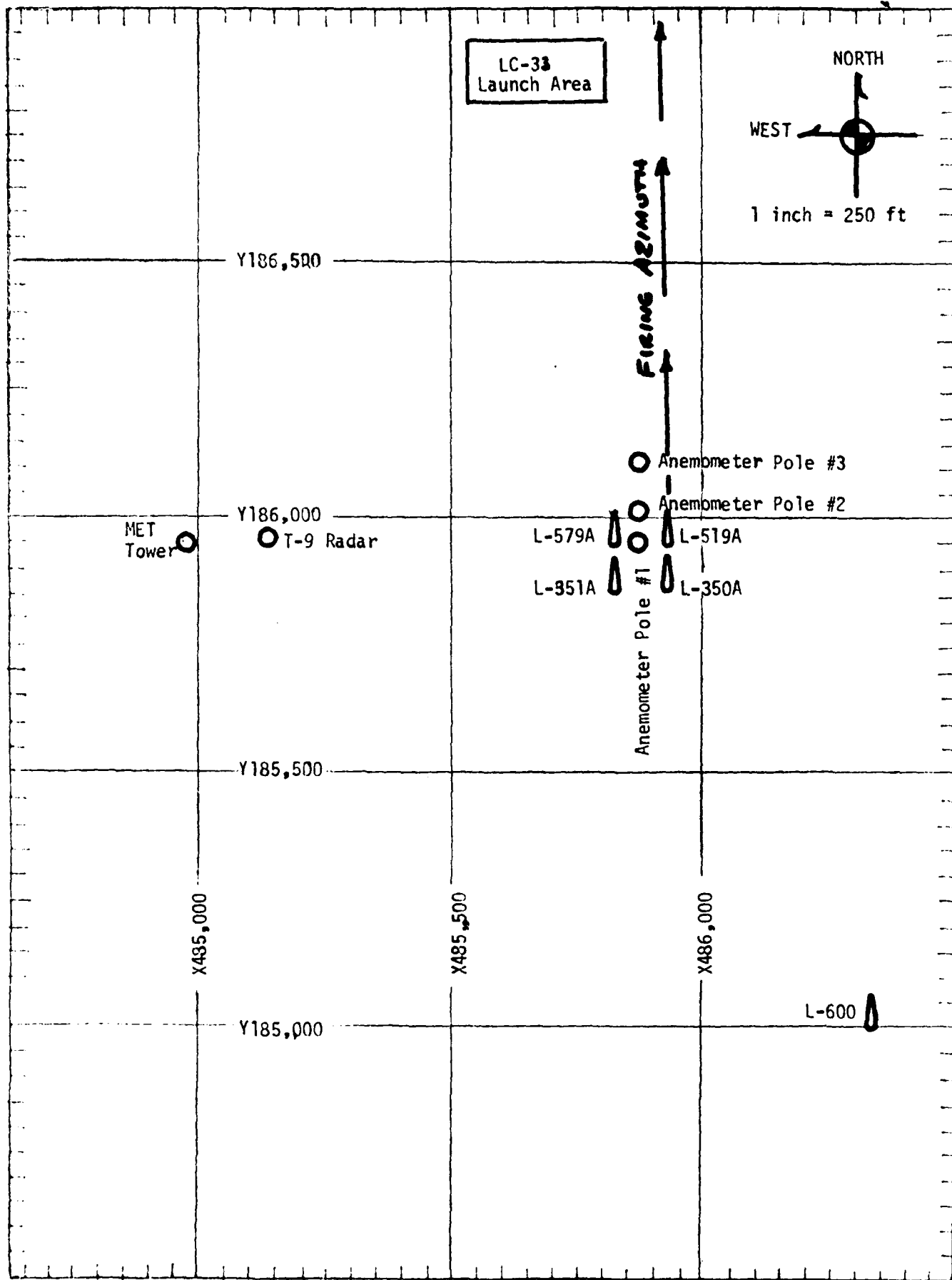


TABLE	1				
DATE	17	July	1981		
	DAY	MONTH	YEAR		
				STATION	LC-33
				X=	484,982.64
				Y=	185,957.73
				H=	3983.00

[illegible][illegible]

PSYCHOMETRIC COMPUTATION

PSYCHROMETRIC COMPUTATION		
TIME:	1430	MDT
DRY BULB TEMP.	29.8	
WET BULB TEMP.	21.0	
WET BULB DEPR.	8.8	
DEW POINT	17.4	
RELATIVE HUMID.	47	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

17 July 81 1432 MDT

POLE #1 X485,874.29 Y185,958.90 H4018.74 33.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	284	04	-30	308	03	-30	286	02
-20	269	03	-20	301	03	-20	273	03
-10	276	03	-10	301	03	-10	270	03
0.0	277	03	0.0	287	03	0.0	286	04
+10	268	02	+10	285	02	+10	291	04

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	269	06	-30	275	04
-20	267	05	-20	261	05
-10	258	03	-10	247	03
0.0	257	03	0.0	250	03
+10	256	04	+10	243	04

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	270	04	-30	259	03
-20	270	03	-20	267	03
-10	256	05	-10	271	05
0.0	255	04	0.0	271	04
+10	242	03	+10	247	03

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 17 July 1981

SITE: LC-33
 TIME: 1438 MDT
 WSTM COORDINATES:
 X= 484,837.15
 Y= 186,125.01
 H= 3,983.57

SITE: NICK
 TIME: 1432 MDT
 WSTM COORDINATES:
 X= 470,734.56
 Y= 255,775.64
 H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	240	06
150		CALM
210	215	02
270	210	03
330	208	05
390	207	06
500	194	07
650	178	08
800	166	09
950		
1150		
1350		
1550		
1750		
2000		

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	033	02
150	069	04
210	071	05
270	070	04
330	070	04
390	074	04
500	097	03
650	135	03
800	219	02
950	248	05
1150	254	06
1350	266	02
1550	292	03
1750	299	07
2000	294	06

DATA OBTAINED FROM
 DOUBLE THEODOLITE
 TRACKED PILOT-BALLOON
 OBSERVATION

DATA OBTAINED FROM
 SINGLE THEODOLITE
 TRACKED PILOT-BALLOON
 OBSERVATION

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
17 JULY 1981WSD 1130 MDT
METCM1324064

00498004	30170881
01516003	30040871
02183002	29720846
03404002	29380808
04389003	29090762
05600003	28750719
06592005	28340677
07542004	27970637
08439004	27670599
09524007	27380563
10439010	27090529
11407009	26820497
12388014	26390451
13380013	25730396
14367014	25070346

LC37 1230 MDT
MET CM1324063

00507003	30470878
01517003	30170868
02471003	29830844
03473003	29500806
04411005	29120760
05601002	28750717
06586004	28380675
07509007	28020636
08475008	27750598
09408008	27470562
10410013	27150528
11376009	26840496
12400013	26410450

LC-37 1432 MDT
METCM1324063

00391001	30640877
01356002	30260867
02341005	30050843
03319004	29690805
04244005	29220760
05482004	28800717
06580004	28390675
07481006	28020636
08410012	27730562
09387013	27440562
10403016	27140528
11398017	26900496
12404013	26450450

STATION ALTITUDE 3989.00 FEET MSL
17 JULY 61
ASCENSION NO. 401

SIGNIFICANT LEVEL DATA
14800210001
WHITE SANDS

GEOGRAPHIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 6

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT
880.7 3989.0	26.2 10.2	54.0
850.0 5011.6	22.3 13.6	54.0
820.4 6020.9	19.2 14.0	72.0
742.6 8020.6	15.1 5.3	52.0
700.0 10455.9	11.2 5.3	67.0
669.4 12500.6	6.0 4.5	90.0
528.4 18073.9	-3.2 -4.2	86.0
500.0 19410.2	-5.3 -4.0	81.0
485.4 20175.0	-6.4 -10.8	71.0
461.8 21450.7	-9.6 -12.7	78.0
430.4 22772.4	-10.0 -10.9	57.0
400.0 25073.8	-15.9 -20.9	65.0
386.4 25929.5	-17.6 -25.1	62.0
351.2 28264.8	-21.8 -30.5	45.0
300.0 32019.8	-30.4 -41.1	34.0

STATION ALTITUDE 3989.00 FEET MSL
17 JULY 81
ACQUISITION NO. 461

UPPER AIR DATA
1.080020401
WHITE CARDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.57033 LONG DEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CURCUMETER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	IND. DATA SPEED KNOTS	INDEX OF REFRACTION
3989.00	889.7	26.2	54.0	1016.6	676.7	240.0	8.0	1.000304
4000.00	880.4	26.2	54.0	1016.6	676.7	240.0	7.9	1.000304
4500.00	865.2	24.3	56.0	1006.0	674.3	275.5	6.0	1.000247
5000.00	850.3	22.3	58.0	995.5	672.0	275.5	4.0	1.000240
5500.00	835.5	20.8	64.8	983.1	670.4	266.6	2.1	1.000249
6000.00	821.0	19.3	71.7	970.9	668.7	194.1	.6	1.000247
6500.00	805.5	18.5	68.6	958.8	667.6	208.6	1.5	1.000278
7000.00	792.3	17.0	65.0	942.8	666.6	216.7	2.6	1.000269
7500.00	778.3	16.3	61.4	929.0	665.6	218.6	2.8	1.000261
8000.00	764.6	15.6	57.9	915.3	664.6	220.9	2.8	1.000253
8500.00	751.1	14.7	54.3	901.9	663.6	220.9	1.8	1.000245
9000.00	737.8	13.5	53.6	888.9	662.5	222.9	1.2	1.000239
9500.00	724.6	12.3	54.2	876.5	661.1	331.9	2.7	1.000237
10000.00	711.6	11.1	62.8	864.4	659.8	335.3	4.3	1.000234
10500.00	698.9	10.1	67.5	852.4	658.4	334.7	5.8	1.000232
11000.00	686.2	9.8	73.1	840.6	656.9	331.5	5.9	1.000229
11500.00	673.7	8.5	78.7	828.6	655.5	330.0	6.0	1.000227
12000.00	661.4	7.3	84.4	817.6	654.0	331.5	6.0	1.000224
12500.00	649.4	6.0	90.0	806.5	652.5	324.6	5.1	1.000221
13000.00	637.3	5.2	89.6	793.9	651.5	305.7	4.0	1.000216
13500.00	625.4	4.4	89.3	781.6	650.4	276.1	3.6	1.000211
14000.00	613.7	3.5	88.9	769.4	649.4	247.4	4.2	1.000206
14500.00	602.3	2.7	88.6	757.5	648.4	248.1	3.8	1.000202
15000.00	591.0	1.9	88.2	745.7	647.4	251.4	3.5	1.000197
15500.00	580.0	1.0	87.8	734.1	646.3	267.7	3.8	1.000193
16000.00	569.2	.2	87.5	722.7	645.3	278.1	4.5	1.000189
16500.00	558.6	-.6	87.1	711.5	644.3	280.6	5.8	1.000185
17000.00	548.1	-1.4	86.8	700.4	643.2	273.5	7.0	1.000181
17500.00	537.9	-2.3	86.4	689.6	642.2	261.2	8.4	1.000177
18000.00	527.9	-3.1	86.1	678.9	641.2	250.4	9.8	1.000173
18500.00	517.8	-3.9	84.4	668.0	640.2	241.3	11.4	1.000169
19000.00	508.0	-4.7	82.5	657.3	639.2	237.6	11.2	1.000165
19500.00	498.3	-5.4	79.8	646.8	638.2	234.4	11.1	1.000161
20000.00	488.7	-6.1	73.3	636.2	637.3	232.7	11.2	1.000157
20500.00	479.3	-7.2	72.8	626.6	636.0	229.4	11.5	1.000153
21000.00	470.0	-8.5	75.5	617.4	634.4	224.0	12.5	1.000151
21500.00	460.9	-9.6	77.2	608.1	633.0	219.2	13.3	1.000148
22000.00	451.9	-9.8	69.3	598.7	632.8	215.0	14.1	1.000144
22500.00	443.1	-9.9	61.3	588.6	632.5	212.9	14.1	1.000140
23000.00	434.4	-10.6	57.8	578.6	631.7	211.7	13.6	1.000137

STATION ALTITUDE 3989.00 FEET MSL
17 JULY 61
ASCENSION NO. 401

UPPER AIR DATA
1980020061
WHITE SANDS

1130 HRS MDT

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 7 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TN)	SPEED KNOTS	
23500.0	429.9	-11.9	-19.1	59.5	567.1	630.1	211.0	12.8	1.000134
24000.0	417.5	-13.1	-19.0	61.3	558.7	620.6	212.0	11.8	1.000132
24500.0	404.2	-14.4	-19.9	63.0	550.4	627.0	214.2	11.9	1.000130
25000.0	401.2	-15.7	-20.8	64.7	542.3	625.4	210.0	12.3	1.000127
25500.0	393.2	-16.7	-22.0	63.5	533.6	624.1	210.2	13.5	1.000125
26000.0	385.3	-17.7	-23.3	61.5	525.0	622.9	213.2	14.5	1.000122
26500.0	377.5	-18.6	-24.8	57.8	516.2	621.6	212.2	14.4	1.000120
27000.0	369.8	-19.5	-26.4	54.2	507.6	620.6	209.3	14.1	1.000117
27500.0	362.4	-20.4	-28.0	50.6	499.2	619.5	200.0	12.9	1.000115
28000.0	355.0	-21.3	-29.6	46.9	490.9	618.4	204.0	12.5	1.000112
28500.0	347.8	-22.3	-31.1	44.3	482.6	617.1	203.5	13.1	1.000110
29000.0	340.5	-23.5	-32.5	42.0	474.9	615.7	205.5	13.8	1.000108
29500.0	333.5	-24.6	-33.9	41.4	467.2	614.3	209.7	14.6	1.000106
30000.0	326.5	-25.8	-35.3	39.9	454.7	612.6	209.1	15.3	1.000104
30500.0	319.8	-26.9	-36.3	38.5	452.3	611.4	206.0	15.8	1.000102
31000.0	313.1	-28.1	-38.2	37.0	444.9	610.0			1.000101
31500.0	306.6	-29.2	-39.6	35.5	437.6	608.5			1.000099
32000.0	300.2	-30.4	-41.0	34.1	430.7	607.1			1.000097

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

WIND VECTORS
1000020401
WHITE CLOUDS

STATION ALTITUDE 3989.00 FEET MSL
17 JULY 61 1130 HRS MDT
ASCENSION I.O. 401

TABLE 8

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE AIR DEGREES CENTIGRADE	WET-BULB DEW POINT PERCENT	WIND DATA	
				DIRECTION DEGREES (TN)	SPEED KNOTS
650.0	5008.	22.3	13.6	275.4	4.0
800.0	6727.	18.2	11.4	213.4	2.0
750.0	8536.	15.5	6.2	224.9	1.7
700.0	10446.	11.2	5.3	334.8	5.7
650.0	12462.	6.1	4.5	325.5	5.2
600.0	14606.	2.5	.8	248.3	3.7
550.0	16914.	-1.3	-3.2	276.0	6.8
500.0	19383.	-5.3	-8.0	234.7	11.0
450.0	22075.	-9.8	-14.0	214.2	14.2
400.0	25031.	-15.9	-20.4	216.8	12.4
350.0	28295.	-22.0	-30.7	203.8	12.9
300.0	31955.	-30.4	-41.1		

STATION ALTITUDE 4051.37 FEET MSL
17 JULY 61
ASCENSION CO. 159

SIGNIFICANT LEVEL DATA
1980140159
LC-37

STATION ALTITUDE 4051.37 FEET MSL
17 JULY 61
ASCENSION CO. 159

PRESSURE GEOMETRIC ALTITUDE		TEMPERATURE		W.L. HUM. PERCENT
MILLIBARS	MSL FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
879.0	4051.4	28.9	17.4	50.0
675.0	4151.2	26.5	15.8	52.0
659.0	4908.9	23.4	15.2	60.0
606.4	6492.0	19.4	12.9	66.0
787.4	7165.4	18.5	9.8	57.0
778.0	7505.0	17.9	9.0	56.0
740.2	8098.6	14.4	6.0	57.0
721.4	9612.4	13.0	7.5	69.0
700.0	10443.8	11.4	6.1	70.0
675.8	11407.7	8.7	5.6	81.0
648.8	12514.5	6.3	3.3	81.0
631.0	13264.5	5.0	3.0	87.0
579.2	15553.5	1.5	-7	85.0
545.8	17122.5	-1.0	-5.0	74.0
537.6	17519.8	-1.9	-5.0	79.0
521.4	18319.0	-3.5	-7.1	76.0
500.0	19407.0	-5.1	-8.7	76.0
450.6	22675.7	-9.7	-14.7	67.0
443.2	22496.1	-10.4	-16.8	59.0
413.8	24224.3	-14.0	-14.5	63.0
400.0	25070.4	-15.2	-21.4	59.0
385.0	26018.1	-17.1	-23.4	54.0
371.4	26903.8	-18.6	-26.2	51.0
337.8	29209.8	-23.5	-33.0	41.0
300.0	32028.6	-30.3	-42.2	30.0

STATION ALTITUDE 4051.37 FEET MSL
17 JULY 81
ASCENSION NO. 159

UPPER AIR DATA
1480154
LC-37
TABLE 10

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LONG DEG

GEODETIC ALTITUDE ASL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DEW POINT TEMPERATURE DEGREES CENTIGRADE	WIND DIRECTION DEGREES (T)	WIND SPEED KNOTS	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.4	878.0	28.9	50.0	17.4	245.0	2.9	1.000317	
4500.0	864.5	25.2	55.3	15.6	260.5	2.9	1.000299	
5000.0	849.7	23.4	60.0	15.2	275.1	3.0	1.000295	
5500.0	834.9	22.0	62.0	14.4	270.2	3.0	1.000290	
6000.0	820.4	20.7	64.0	13.7	265.1	3.0	1.000284	
6500.0	806.2	19.4	65.9	12.9	259.8	2.9	1.000278	
7000.0	792.0	18.7	59.2	10.6	245.9	3.5	1.000266	
7500.0	778.1	17.9	56.0	9.0	235.9	4.3	1.000258	
8000.0	764.4	16.7	56.4	7.9	232.0	4.7	1.000252	
8500.0	750.8	15.4	56.7	6.9	231.2	4.4	1.000246	
9000.0	737.5	14.2	58.7	6.2	246.4	2.3	1.000242	
9500.0	724.3	13.2	67.1	7.3	298.2	1.6	1.000242	
10000.0	711.3	12.3	69.5	6.8	332.5	2.6	1.000239	
10500.0	698.6	11.2	70.6	5.1	333.0	3.4	1.000234	
11000.0	685.9	9.8	76.3	5.9	319.4	3.9	1.000231	
11500.0	673.5	8.5	81.0	5.4	304.6	4.3	1.000228	
12000.0	661.2	7.4	81.0	4.4	292.2	4.8	1.000222	
12500.0	649.1	6.3	81.0	3.3	254.6	6.1	1.000217	
13000.0	637.2	5.5	84.9	3.1	264.1	7.4	1.000214	
13500.0	625.5	4.6	86.8	2.6	261.0	7.8	1.000210	
14000.0	613.9	3.9	86.4	1.8	260.0	7.9	1.000206	
14500.0	602.5	3.1	85.9	1.0	245.5	7.3	1.000201	
15000.0	591.3	2.3	85.5	.2	234.0	6.8	1.000197	
15500.0	580.4	1.6	85.0	-.7	228.9	6.7	1.000193	
16000.0	569.5	.8	81.9	-1.9	227.1	7.8	1.000188	
16500.0	558.8	-.0	78.4	-3.3	225.0	9.5	1.000183	
17000.0	548.3	-.8	74.9	-4.7	228.4	10.9	1.000178	
17500.0	538.0	-1.9	78.8	-5.0	227.0	12.3	1.000175	
18000.0	527.8	-2.9	77.2	-6.3	227.1	12.0	1.000171	
18500.0	517.3	-3.8	76.0	-7.4	225.0	11.6	1.000167	
19000.0	507.9	-4.5	75.7	-8.1	219.5	10.4	1.000164	
19500.0	498.2	-5.3	75.0	-8.9	212.1	9.3	1.000161	
20000.0	488.6	-6.1	74.0	-10.0	212.1	8.9	1.000157	
20500.0	479.1	-7.0	72.3	-11.1	213.2	8.8	1.000153	
21000.0	469.9	-7.8	70.6	-12.2	218.4	10.5	1.000150	
21500.0	460.8	-8.7	68.9	-13.4	222.2	12.1	1.000147	
22000.0	451.9	-9.6	67.3	-14.5	225.4	13.5	1.000144	
22500.0	443.1	-10.4	59.0	-16.8	228.1	14.4	1.000140	
23000.0	434.4	-11.4	60.2	-17.6	230.8	14.4	1.000137	
23500.0	425.9	-12.5	61.3	-18.4	232.1	14.1	1.000135	

STATION ALTITUDE 4051.37 FEET MSL
17 JULY 81
ASCENSION IS. 134 1230 HRS MDT

UPPER AIR DATA
1980100159
LC-37

MODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 10 Cont

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TH)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	417.5	-13.5	62.5	559.5	628.1	231.2	13.6	1.000132
24500.0	409.3	-14.4	61.7	550.3	627.0	228.4	13.0	1.000130
25000.0	401.1	-15.1	59.3	541.0	626.1	223.4	12.5	1.000127
25500.0	393.1	-16.1	58.5	532.2	625.0	218.3	12.4	1.000124
26000.0	385.3	-17.1	58.0	523.6	623.7	213.3	12.5	1.000122
26500.0	377.5	-17.9	54.2	514.9	622.6	209.1	12.8	1.000119
27000.0	369.9	-18.8	50.6	506.3	621.5	205.3	13.2	1.000117
27500.0	362.4	-19.9	48.4	498.1	620.2	204.7	13.4	1.000115
28000.0	355.0	-20.9	46.2	490.1	618.4	204.3	13.6	1.000112
28500.0	347.8	-22.0	44.1	482.2	617.6	206.3	13.8	1.000110
29000.0	340.7	-23.1	41.9	474.4	616.2	208.3	14.0	1.000108
29500.0	333.7	-24.2	39.9	466.8	614.8	206.3	13.8	1.000106
30000.0	326.7	-25.4	37.9	459.3	613.3	204.1	13.6	1.000104
30500.0	319.9	-26.6	36.0	452.0	611.8	200.0	13.9	1.000102
31000.0	313.3	-27.8	34.0	444.7	610.3	195.9	14.3	1.000100
31500.0	306.8	-29.0	32.1	437.6	608.8			1.000099
32000.0	300.4	-30.2	30.1	430.7	607.2			1.000097

STATION ALTITUDE 4051.37 FEET MSL
 17 JULY 61
 ASCENSION, .O. 159 1230 HRS MDT

ANDATORY LEVELS
 1980140159
 LC-37

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE 11

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID. PERCENT	WIND DATA	
MILLIBARS	FEET	ATP DEGREES	DEPTOIN CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4985.	23.4	15.2	60.	275.3	3.0
800.0	6712.	19.1	11.9	63.	254.0	3.1
750.0	8525.	15.3	6.4	57.	231.7	4.3
700.0	10433.	11.4	6.1	70.	336.7	3.4
650.0	12451.	6.4	3.4	81.	293.1	5.9
600.0	14597.	2.9	.8	86.	269.9	7.2
550.0	16899.	-.7	-4.5	75.	228.3	10.7
500.0	19379.	-5.1	-8.7	76.	213.6	9.5
450.0	22075.	-9.8	-14.4	60.	226.0	13.7
400.0	25028.	-15.2	-21.4	59.	222.8	12.5
350.0	28300.	-21.7	-30.4	45.	205.7	13.7
300.0	31964.	-30.3	-42.2	30.		

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

SIGNIFICANT LEVEL DATA
1980100160
LC-37

STATION ALTITUDE 4051.37 FEET MSL
17 JULY 61
ASCENSION NO. 100 1430 MRS MDT

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
876.9	4051.4	31.0	16.0	42.0
873.8	4155.3	28.4	15.0	44.0
850.0	4359.3	26.1	14.9	50.0
824.6	5830.0	23.9	14.3	55.0
793.8	6925.8	20.6	13.1	62.0
755.2	8335.3	16.6	12.6	77.0
736.4	9041.0	15.1	11.0	85.0
709.4	10118.2	13.0	10.4	64.0
700.0	10447.9	12.0	10.7	70.0
680.4	11229.8	10.1	10.4	78.0
635.2	13095.6	5.0	3.5	90.0
626.0	13480.5	5.6	3.3	85.0
617.4	13860.8	4.7	1.7	81.0
599.8	14635.5	3.1	.8	85.0
573.8	15814.9	1.4	-3.3	71.0
565.0	16224.2	.6	-3.0	77.0
531.6	17826.8	-2.4	-5.0	62.0
500.0	19423.9	-4.2	-9.0	69.0
451.2	22065.9	-9.1	-14.6	84.0
443.4	22509.6	-9.8	-16.1	60.0
434.8	23006.6	-10.5	-16.4	52.0
412.6	24330.2	-12.3	-19.0	57.0
400.0	25100.9	-13.5	-22.4	47.0
369.2	27099.6	-17.7	-26.2	39.0
342.0	28370.0	-21.8	-33.4	34.0
300.0	32096.2	-29.8	-42.4	28.0

STATION ALTITUDE 4051.17 FEET MSL
17 JULY 81
ASCENSION I.O. 100 1430 HRS MDT

UPPER AIR DATA
1480140160
LC-37

GEOMETRIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 13

GEOMETRIC ALTITUDE FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	870.9	31.0	42.0	994.2	682.2	270.0	1.0	1.000299
4500.0	865.5	27.4	46.6	993.4	677.9	261.9	2.0	1.000293
5000.0	848.8	26.0	50.2	981.0	676.4	195.0	3.1	1.000290
5500.0	834.2	24.7	53.1	968.3	674.9	193.0	4.3	1.000287
6000.0	819.9	23.4	56.1	955.0	673.4	186.0	4.7	1.000283
6500.0	805.7	21.9	59.3	944.4	671.6	176.5	4.6	1.000278
7000.0	791.7	20.4	62.8	932.8	669.9	163.5	4.2	1.000274
7500.0	777.8	19.0	68.1	920.9	668.3	145.4	3.8	1.000272
8000.0	764.2	17.6	73.4	909.1	666.7	127.0	3.8	1.000269
8500.0	750.8	16.2	74.2	897.5	665.0	129.4	2.1	1.000262
9000.0	737.5	15.2	65.7	885.8	663.5	151.3	.5	1.000249
9500.0	724.3	14.2	64.6	873.3	662.2	263.2	1.5	1.000243
10000.0	711.4	13.2	64.1	860.9	661.0	272.7	3.1	1.000237
10500.0	698.7	11.9	67.7	849.4	659.5	283.1	3.1	1.000235
11000.0	685.1	10.7	75.7	837.6	658.1	292.6	3.3	1.000232
11500.0	673.6	9.4	79.7	826.3	656.5	296.7	3.6	1.000229
12000.0	661.4	8.0	83.0	815.3	654.9	300.1	3.9	1.000224
12500.0	649.3	6.6	86.2	804.5	653.2	283.9	4.5	1.000220
13000.0	637.4	5.3	89.4	793.8	651.6	271.6	5.4	1.000216
13500.0	625.7	5.6	84.9	774.4	651.9	254.3	6.9	1.000211
14000.0	614.2	4.4	81.7	767.6	650.4	242.7	8.8	1.000205
14500.0	602.8	3.4	84.3	756.3	649.2	234.7	10.1	1.000201
15000.0	591.6	2.6	80.7	744.7	648.1	228.3	11.3	1.000196
15500.0	580.6	1.9	74.7	733.0	647.1	223.6	12.1	1.000189
16000.0	569.8	1.0	73.7	721.6	646.1	220.1	12.6	1.000185
16500.0	559.1	.1	77.9	710.5	645.0	219.8	13.5	1.000183
17000.0	548.6	-.9	79.4	699.6	643.9	221.2	14.6	1.000179
17500.0	538.2	-1.8	81.0	688.9	642.7	223.1	15.4	1.000176
18000.0	528.1	-2.6	80.6	678.0	641.7	225.1	16.1	1.000172
18500.0	518.0	-3.2	76.5	666.8	641.0	225.0	16.5	1.000168
19000.0	508.2	-3.7	72.5	655.8	640.3	224.2	16.7	1.000164
19500.0	498.5	-4.3	68.9	644.6	639.5	223.6	16.6	1.000160
20000.0	488.9	-5.3	67.9	634.4	638.3	223.2	16.3	1.000156
20500.0	479.5	-6.2	67.0	624.5	637.2	223.4	15.4	1.000153
21000.0	470.3	-7.1	66.0	614.7	636.0	223.7	14.4	1.000150
21500.0	461.2	-8.1	65.1	605.0	634.9	224.5	13.4	1.000146
22000.0	452.4	-9.0	64.1	595.5	633.7	225.5	12.3	1.000143
22500.0	443.6	-9.8	60.1	585.9	632.7	229.6	12.3	1.000140
23000.0	434.9	-10.5	52.1	576.1	631.8	234.1	12.5	1.000136
23500.0	426.4	-11.2	53.9	566.3	631.0	235.7	13.4	1.000134

STATION ALTITUDE 4051.37 FEET MSL
17 JULY 61
ASCENSION NO. 100

UPPER AIR DATA
1480100160
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

1430 HRS MDT

TABLE 13 Cont

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES (TN))	SPEED KNOTS	INDEX OF REFRACTION
24000.0	410.0	-11.9	55.8	550.8	630.1	237.0	14.3	1.000132
24500.0	409.8	-12.6	54.8	547.2	629.3	235.2	13.1	1.000129
25000.0	401.7	-13.3	48.4	538.1	628.3	233.1	11.9	1.000126
25500.0	393.8	-14.3	45.4	529.5	627.0	230.9	10.8	1.000123
26000.0	385.9	-15.4	43.4	521.1	625.7	229.0	10.2	1.000121
26500.0	378.2	-16.4	41.4	512.9	624.4	227.0	10.7	1.000118
27000.0	370.7	-17.5	39.4	504.8	623.1	228.9	10.9	1.000116
27500.0	363.2	-18.6	37.9	496.7	621.8	225.7	10.7	1.000114
28000.0	355.8	-19.7	36.6	488.8	620.4	222.8	11.1	1.000112
28500.0	348.6	-20.8	35.3	481.0	619.0	220.5	11.9	1.000110
29000.0	341.6	-21.9	33.9	473.4	617.7	217.0	12.5	1.000108
29500.0	334.5	-23.2	33.0	465.9	616.1	214.2	13.0	1.000106
30000.0	327.5	-24.4	32.0	458.6	614.5	210.3	13.1	1.000104
30500.0	320.8	-25.7	31.1	451.5	612.9	205.7	12.7	1.000102
31000.0	314.1	-27.0	30.1	444.4	611.3			1.000100
31500.0	307.6	-28.3	29.1	437.5	609.7			1.000099
32000.0	301.2	-29.6	28.2	430.7	608.1			1.000097

STATION ALTITUDE 4051.37 FEET MSL
17 JULY 81 1430 HRS MDT
ASCENSION NO. 100

MANDATORY LEVELS
19801R0160
LC-37

GEOGRAPHIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 14

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEW POINT CENTIGRADE	PERCENT	DIRECTION DEGREES (TR)	SPEED KNOTS	
850.0	4956.	26.1	14.4	50.	190.1	3.0	
800.0	6699.	21.3	13.3	61.	172.3	4.6	
750.0	8521.	16.2	11.5	74.	129.0	2.1	
700.0	10437.	12.0	6.7	70.	281.9	3.1	
650.0	12460.	6.7	4.5	80.	284.9	4.5	
600.0	14609.	3.1	.8	85.	233.1	10.4	
550.0	16912.	-1.7	-3.9	79.	221.0	14.5	
500.0	19336.	-4.2	-9.0	69.	223.7	16.6	
450.0	22099.	-9.2	-14.9	63.	226.4	12.3	
400.0	25066.	-13.5	-22.4	47.	232.7	11.7	
350.0	28355.	-20.6	-31.8	36.	221.0		
300.0	32031.	-29.8	-42.4	28.			

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